## **ABSTRACT**

The present invention provides a method for producing a xanthophyll from a photosynthetic microalga, which includes inoculating a photosynthetic microalga containing a xanthophyll, preferably an encysted microalga, into a nutrient medium to grow the microalga; and encysting the grown microalga, by a single-step culture method in which the growth step and the encystment step are performed continuously using a nutrient medium having a low nitrogen source concentration, or by a two-step culture method in which the microalga is grown in a nutrient medium having a high nitrogen source concentration and then transferred to an encystment medium.

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